Please enter the following as the claims in this case, with all amendments as shown:

1 (currently amended). A method of coating a microelectronic substrate, comprising the steps of:

(a) providing a microelectronic substrate in an enclosed vessel, said substrate having a surface portion;

(b) at least partially filling said enclosed vessel with a first supercritical fluid so that said first supercritical fluid contacts said surface portion, said first supercritical fluid carrying a coating component; then

(c) adding a separate compressed gas atmosphere to said reaction vessel so that a boundary is formed between said first supercritical fluid and said separate compressed gas atmosphere, said ~~second~~ separate compressed gas atmosphere having a density less than said first supercritical fluid; and then

(d) displacing said first supercritical fluid from said vessel by continuing adding said separate compressed gas atmosphere to said vessel so that said boundary moves across said surface portion and a thin film of coating component is deposited on said microelectronic substrate.

2 (original). The method of claim 1, wherein said first supercritical fluid dissolves or disperses into said separate compressed gas atmosphere during said displacing step while said thin film of coating component is deposited.

3 (original). The method of claim 1, further comprising the step of:

at least partially filling said enclosed vessel with a secondary compressed gas between said providing step *(a)* and said at least partially filling step *(b)*.

4 (currently amended). A method according to claim 1, wherein said first supercritical fluid and said ~~second~~ separate compressed gas atmosphere are in said vessel are at a pressure of between about 1,000 and 10,000 psi and a temperature of between about 30 and 250 degrees Centigrade.

5 (original). A method according to claim 1, wherein:

said first supercritical fluid comprises carbon dioxide;

said separate compressed gas atmosphere comprises at least one gas selected from the group consisting of helium, argon, nitrogen, oxygen, hydrogen, carbon dioxide, and mixtures thereof; and

said thin film is from about 10 Angstroms to about 2 microns thick.

6 (original). A meethod according to claim 1, wherein said separate compressed gas atmosphere comprises heated carbon dioxide at a temperature at least 5 degrees centigrade higher than the temperature of said first supercritical fluid.

7 (currently amended). A method of coating a microelectronic substrate, comprising the steps of:

(a) providing a microelectronic substrate in an enclosed vessel, said substrate having a surface portion;

(b) at least partially filling said enclosed vessel with a first supercritical fluid so that said first supercritical fluid contacts said surface portion, said first supercritical fluid carrying a coating component; then

(c) adding a separate supercritical fluid to said reaction vessel so that a boundary is formed between said first supercritical fluid and said separate supercritical fluid, said separate supercritical fluid having a density less than said first supercritical fluid; and then

(d) displacing said first supercritical fluid from said vessel by continuing adding said separate supercritical fluid to said vessel so that said boundary moves across said surface portion and a thin film of coating component is deposited on said microelectronic substrate.

~~A method according to claim 1, wherein said separate compressed gas atmosphere comprises a supercritical fluid.~~

8-32 (Cancelled).

33 (new). The method of claim 7, wherein said first supercritical fluid dissolves or disperses into said separate supercritical fluid during said displacing step while said thin film of coating component is deposited.

34 (original). The method of claim 7, further comprising the step of:

at least partially filling said enclosed vessel with a secondary compressed gas between said providing step *(a)* and said at least partially filling step *(b)*.

35 (original). A method according to claim 7, wherein said first supercritical fluid and said separate supercritical fluid are in said vessel are at a pressure of between about 1,000 and 10,000 psi and a temperature of between about 30 and 250 degrees Centigrade.

36 (original). A method according to claim 7, wherein:

said first supercritical fluid comprises carbon dioxide;

said separate supercritical fluid comprises at least one compound selected from the group consisting of helium, argon, nitrogen, oxygen, hydrogen, carbon dioxide, and mixtures thereof; and

said thin film is from about 10 Angstroms to about 2 microns thick.

37 (original). A meethod according to claim 7, wherein said separate supercritical fluid comprises heated carbon dioxide at a temperature at least 5 degrees centigrade higher than the temperature of said first supercritical fluid.